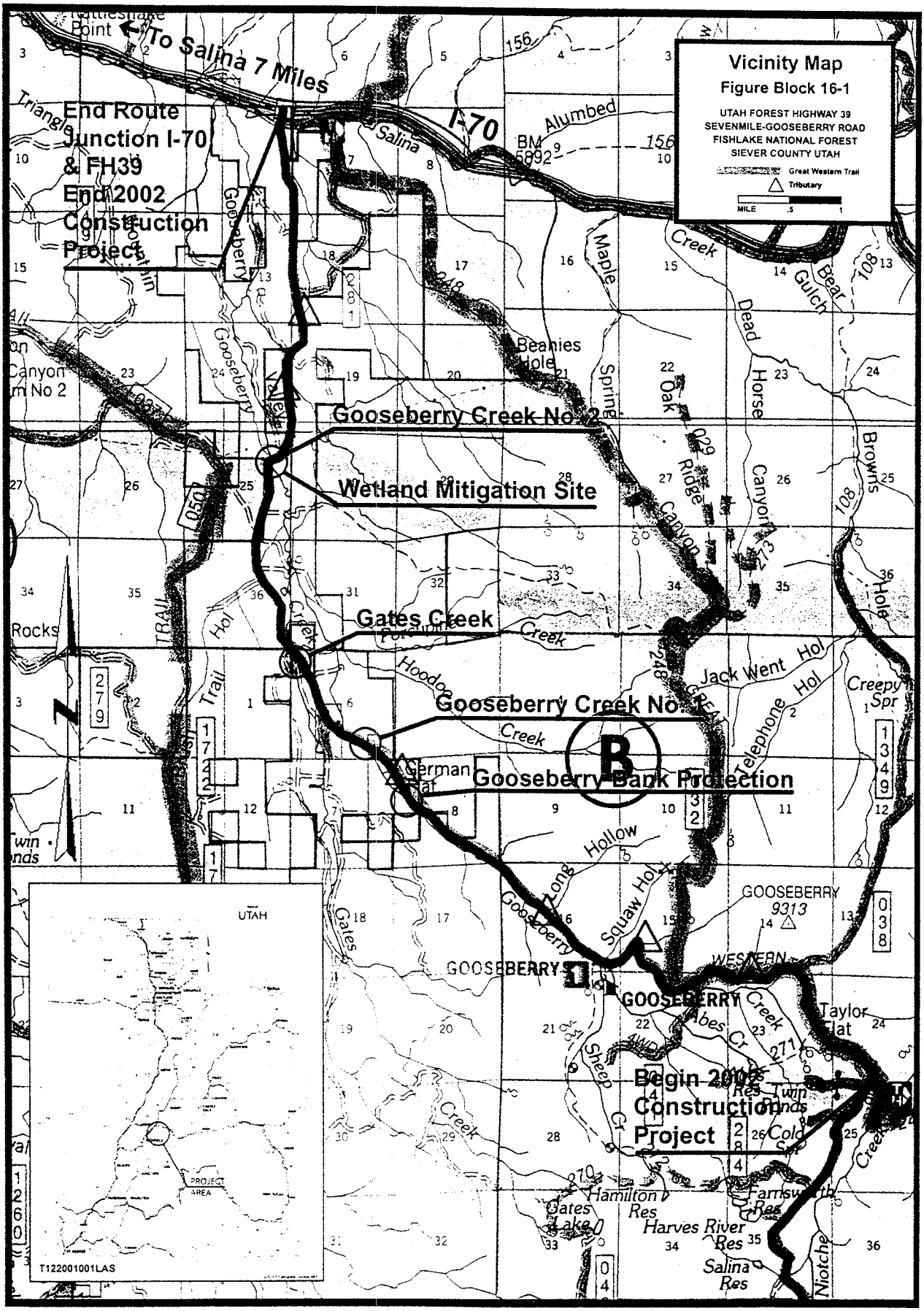
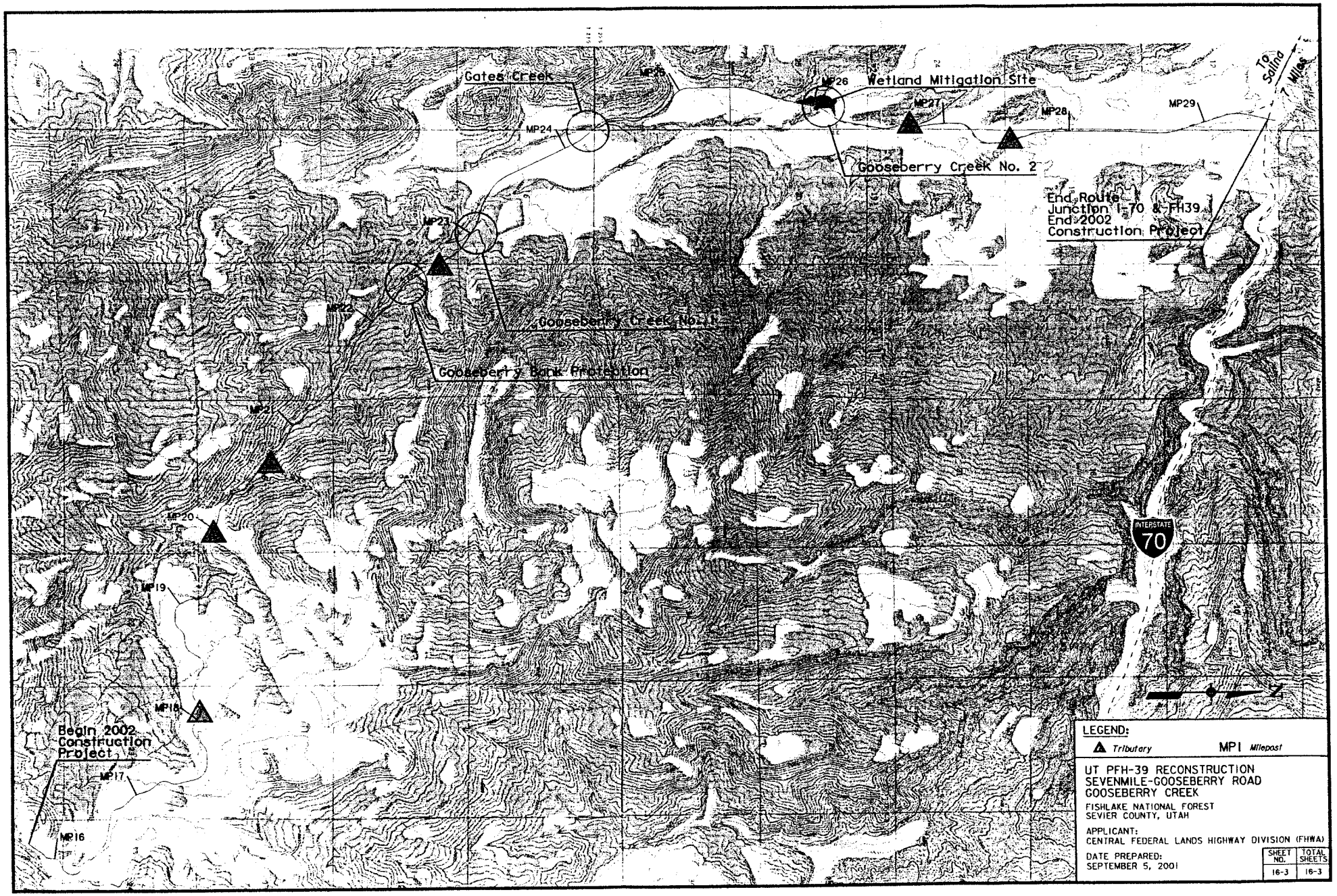


Exhibit 1
199550275

Exhibit2
199550275



Site One:

Gooseberry Creek Crossing No. 1

Location: Approximately 6.1 miles south of Interstate 70 (STA 36+143). Section 6, T23S, R2E

Nature of Activity: The work at this location includes improving the existing substandard roadway to current regulatory standards. There are no major geometric horizontal realignments at this location. The existing 6.1 meter (20 feet) roadway will be widened to 7.8 meters (26 feet). The existing profile grade will be raised by approximately 3.8 meters (12.5 feet). To minimize environmental impacts, fill slopes have been steepened to 1:2 (2:1) slopes. Safety improvements are provided to shield drivers from these steep slopes and drainage structure, which are considered roadside hazards.

Activities to the Gooseberry Creek involve the replacement of the existing drainage structures, which include a concrete box culvert and corrugated metal pipe (CMP). A 3350 mm x 2440 mm (11x8 ft) reinforced concrete box (RCB) is proposed to replace existing RCB culverts and (CMP) culvert. The new structure is 34 meters (111.5 feet) in length and includes wingwalls. The proposed structure is designed to accommodate a 100 year storm event.

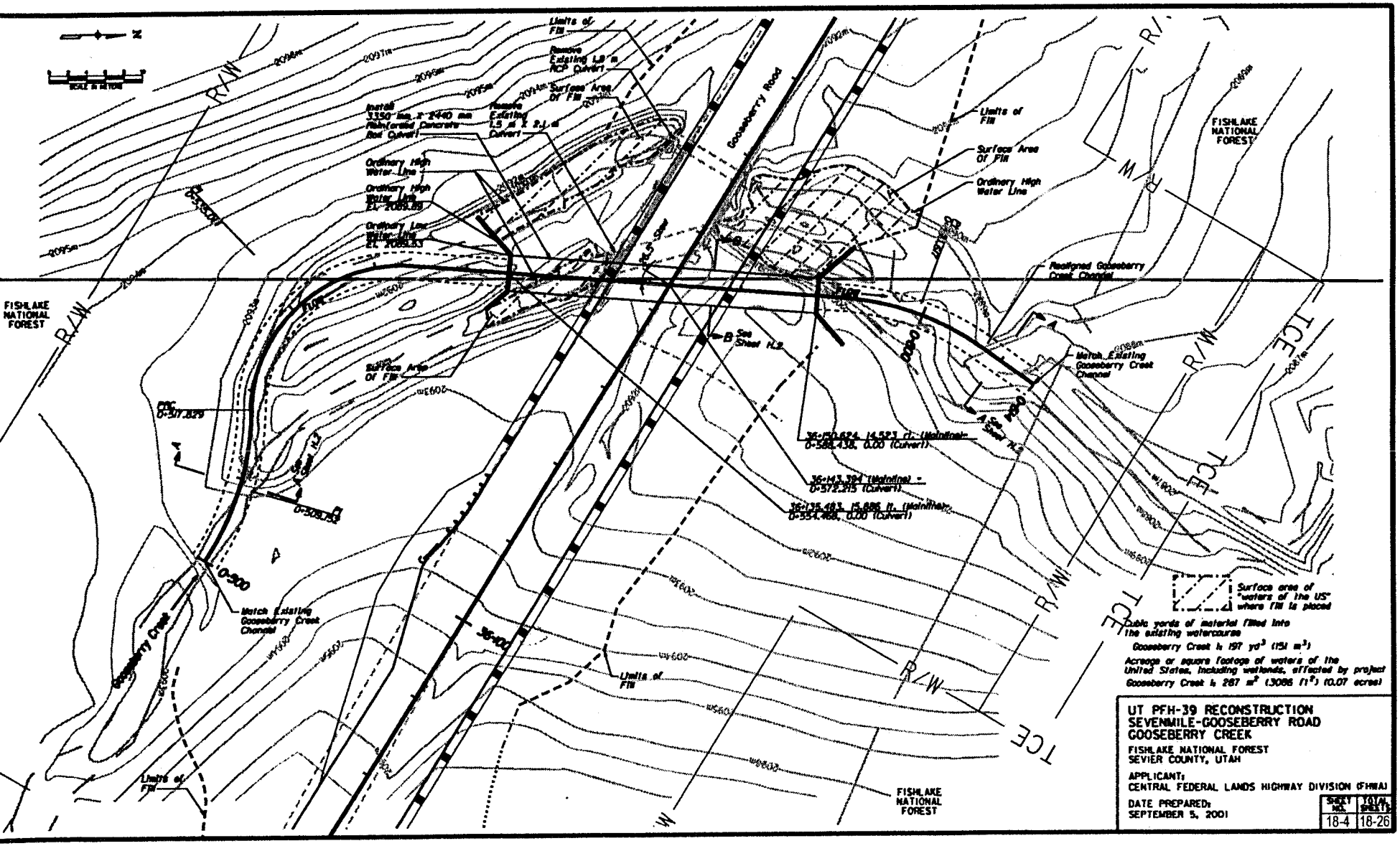
Culvert Information	**Existing**		**Proposed**
Shape	Box	Cylindrical	Box
Material	RCB	CMP	RCB
Size	1520mm x 2130mm	1830mm	3350mm x 2440mm
Upstream Invert Elevation (m) Downstream Invert Elevation (m)	2090.04 2089.82	2089.63 2089.45	2089.16 2089.01
Culvert Length (m)	12.5	10.7	34.0
Slope (%)	1.8	1.7	.44

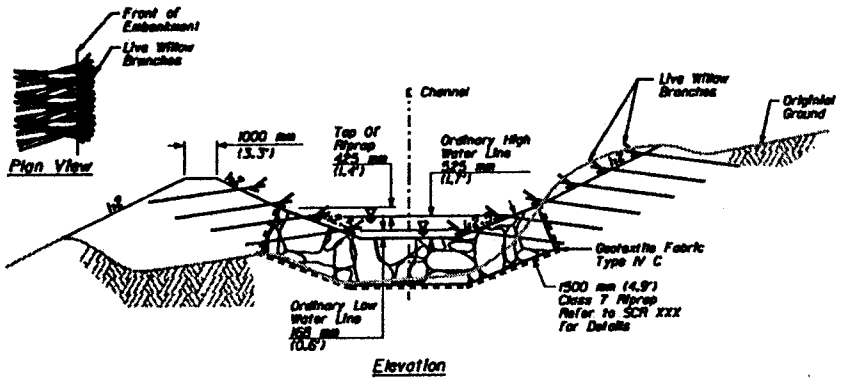
The hydrologic characteristics of Gooseberry Creek through this reach are listed in the following table:

Hydrologic Characteristic	**Gooseberry I Crossing Value (metric units)**	**Gooseberry I Crossing Value (English units)**
Drainage Area	3140 ha	7750 ac (12.1 mi^2)
Stream Length through Drainage Area	10,950 m	35,925 ft (6.8 mi)
Approximate Stream Slope through Drainage Area	10%	10%
2-Year Discharge (Q_2)	1.5 cms	52 cfs
25-Year Discharge (Q_{25})	7.9 cms	280 cfs
100-Year Discharge (Q_{100})	8.9 cms	315 cfs

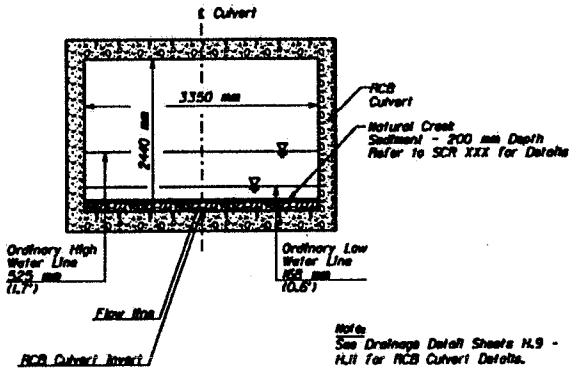
This segment of the Gooseberry Creek contain adult and juvenile Rainbow Trout, whos typical spawning season is from December to April. The drainage structure is designed to maintain safe fish

Exhibit 3-2
199550275



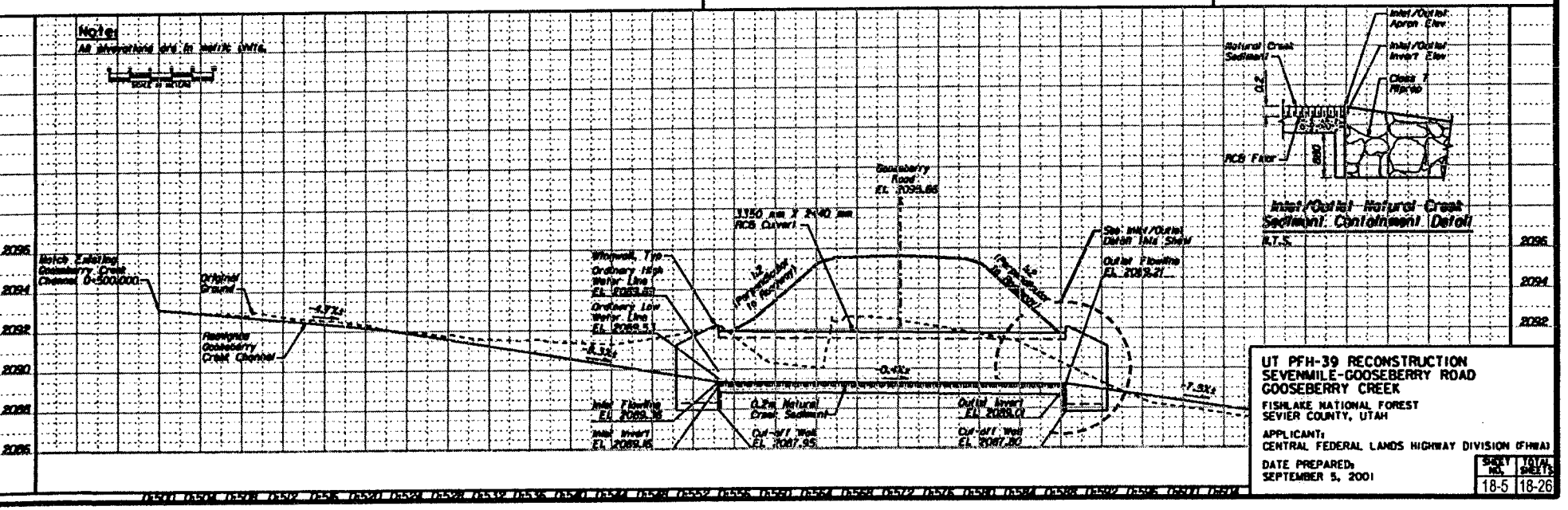


Reconstructed Gooseberry Creek Channel
Section A - A
See Sheet H.I



RCB Structure Section B - B
See Sheet H.I

Q (25) = 7.9 m^3/s
Drainage Area = 3,137 ha



Inlet/Outlet Natural Creek Sediment Containment Detail
N.T.S.

UT PFH-39 RECONSTRUCTION
SEVENMILE-GOOSEBERRY ROAD
GOOSEBERRY CREEK

FISHLAKE NATIONAL FOREST
SEVIER COUNTY, UTAH

APPLICANT:
CENTRAL FEDERAL LANDS HIGHWAY DIVISION (FHWA)

DATE PREPARED:
SEPTEMBER 5, 2001

SHEET NO.	TOTAL SHEETS
18-5	18-26

Site Two:

Gates Creek Crossing

Location: Approximately 5.2 miles south of Interstate 70 (STA 37+670). Section 36, T22S, R1E

Nature of Activity: The work at this location includes improving the existing substandard roadway to current regulatory standards. There are no major geometric horizontal realignments at this location. The existing 6.1 meter (20 feet) roadway will be widened to 7.8 meters (26 feet). The existing profile grade will be raised by approximately 2.5 meters (8.2 feet). To minimize environmental impacts, fill slopes have been steepened to 1:2 (2:1) slopes. Safety improvements are provided to shield drivers from these steep slopes and drainage structure, which are considered roadside hazards.

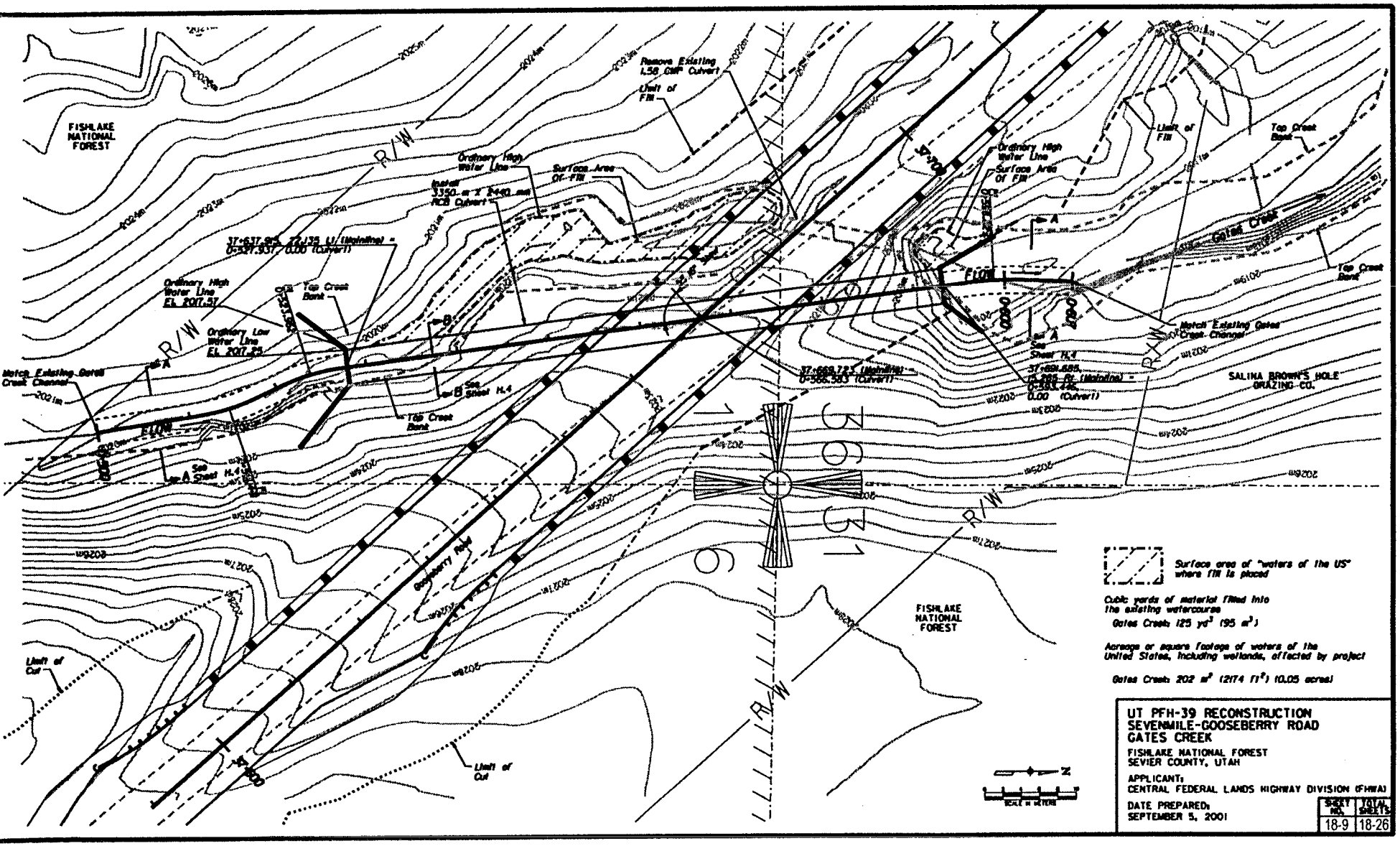
Activities to the Gates Creek involve the replacement of the existing drainage structures, which include two corrugated metal pipes (CMP). The 1520 mm existing culvert receives the normal flow of the creek and the 1220 mm culvert acts as an overflow culvert for storm events. A 3350 mm x 2440 mm (11X8 ft) reinforced concrete box (RCB) is proposed to replace the two existing cylindrical culverts. The new structure is 65.5 meters (215 feet) in length and includes wingwalls. The proposed structure is designed to accommodate a 100 year storm event.

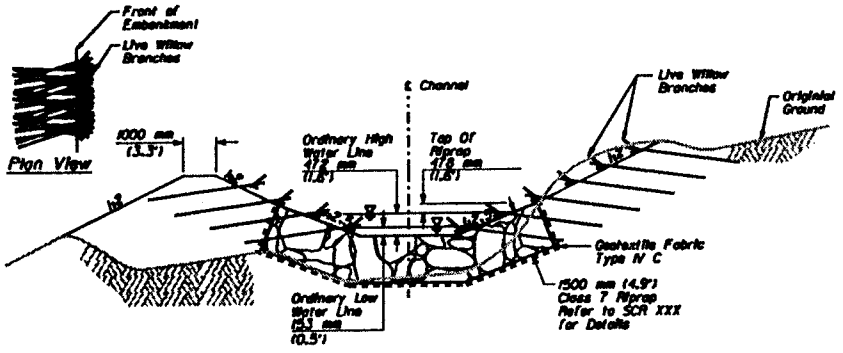
Culvert Information	Existing		Proposed
Shape	Cylindrical	Cylindrical	Box
Material	CMP	CMP	RCB
Size	1520mm	1220mm	3350mm x 2440mm
Upstream Invert Elevation (m) Downstream Invert Elevation (m)	2016.70 2014.50	2018.66 2016.96	2016.90 2016.75
Culvert Length (m)	16.0	9.4	65.5
Slope (%)	1.8	1.4	0.25

The hydrologic characteristics of Gates Creek through this reach are listed in the following table:

Hydrologic Characteristic	Gates Creek Crossing Value (metric units)	Gates Creek Crossing Value (English units)
Drainage Area	2,500 ha	6,169 ac (9.6 mi^2)
Stream Length through Drainage Area	10,690 m	35,065 ft (6.6 mi)
Approximate Stream Slope through Drainage Area	10%	10%
2-Year Discharge (Q_2)	1.0 cms	37 cfs
25-Year Discharge (Q_{25})	7.9 cms	170 cfs
100-Year Discharge (Q_{100})	8.1 cms	287 cfs

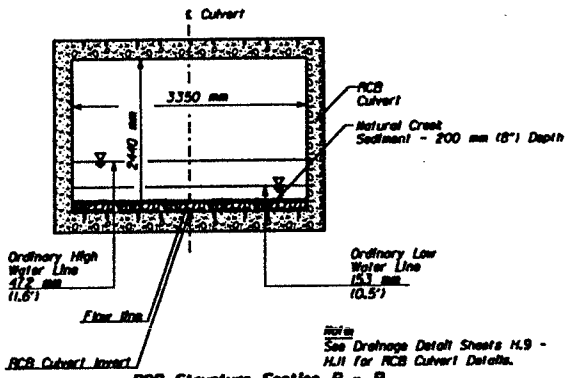
Exhibit 4-2
199550275





Elevation

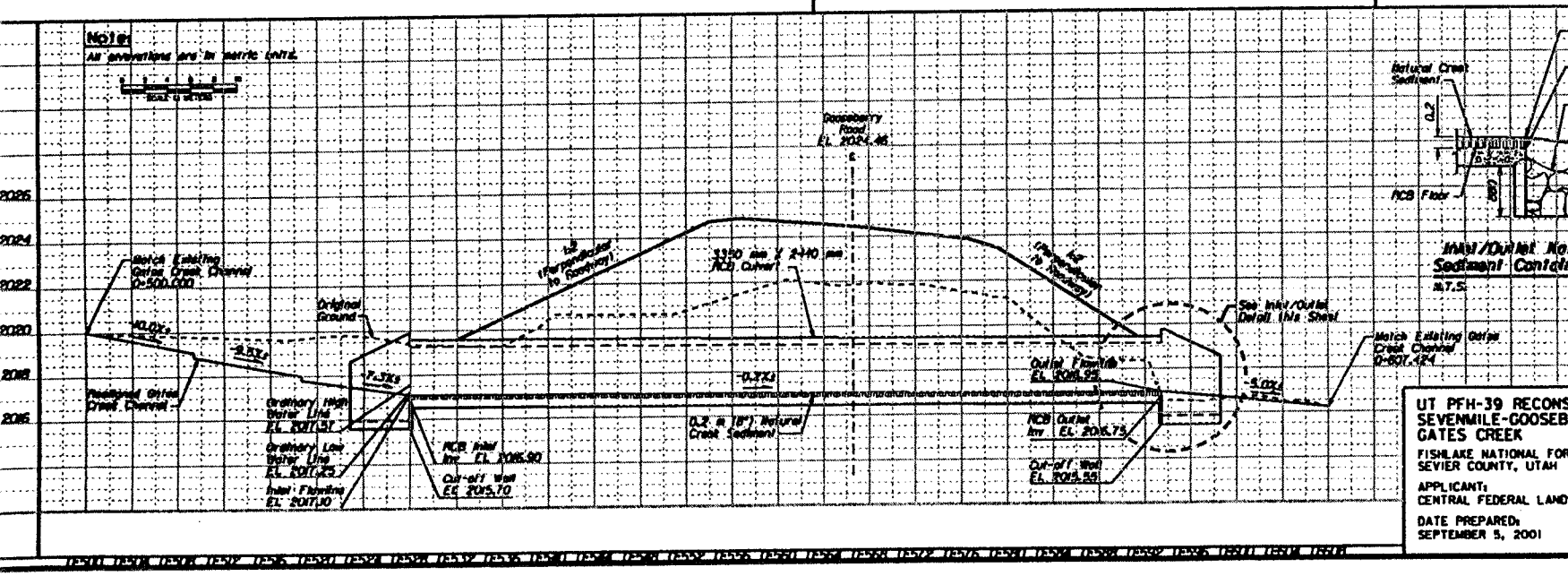
Reconstructed Gates Creek Channel
Section A - A
See Sheet H.3

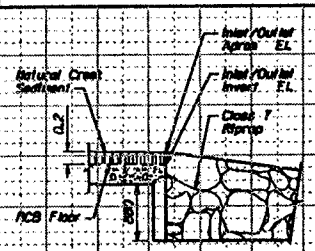


Note:
See Drainage Detail Sheets H.9 - H.11 for RCB Culvert Details.

RCB Structure Section B - B
See Sheet H.3

Q (25) = 7.2 m³/s
Drainage Area = 2,739 ha





Inlet/Outlet Natural Creek Sediment Containment Detail
N.T.S.

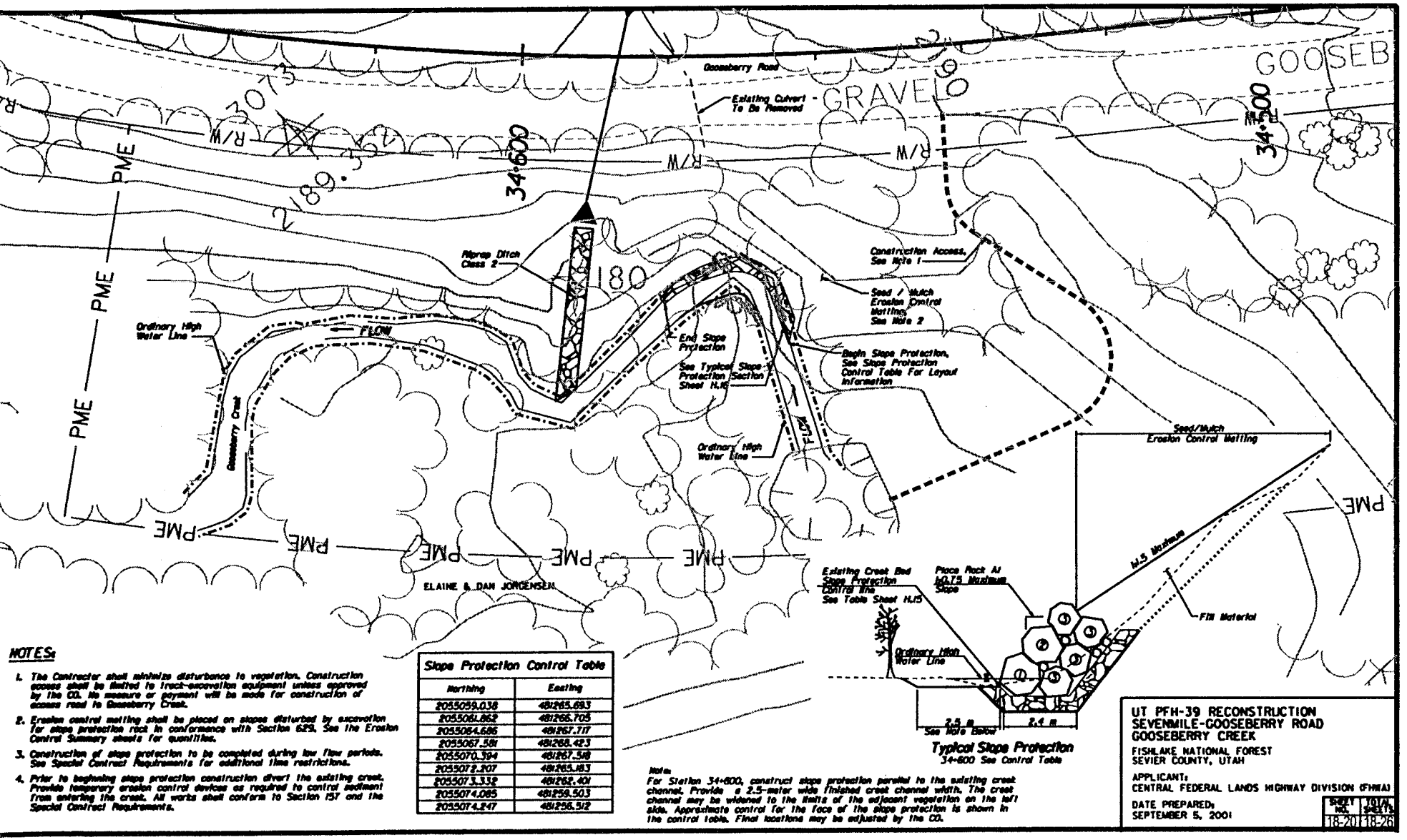
UT PFH-39 RECONSTRUCTION
SEVENMILE-GOOSEBERRY ROAD
GATES CREEK

FISHLAKE NATIONAL FOREST
SEVIER COUNTY, UTAH

APPLICANT:
CENTRAL FEDERAL LANDS HIGHWAY DIVISION (FHWA)

DATE PREPARED:
SEPTEMBER 5, 2001

SHEET NO.	TOTAL SHEETS
18-10	18-26



Typical Slope Protection
34+600 See Control Table

NOTES:

1. The Contractor shall minimize disturbance to vegetation. Construction access shall be limited to track-excavation equipment unless approved by the CO. No measure or payment will be made for construction of access road to Gooseberry Creek.
2. Erosion control matting shall be placed on slopes disturbed by excavation for slope protection rock in conformance with Section 625. See the Erosion Control Summary sheets for quantities.
3. Construction of slope protection to be completed during low flow periods. See Special Contract Requirements for additional time restrictions.
4. Prior to beginning slope protection construction divert the existing creek. Provide temporary erosion control devices as required to control sediment from entering the creek. All works shall conform to Section 157 and the Special Contract Requirements.

Slope Protection Control Table

Northing	Easting
2055059.038	481265.693
2055061.862	481266.705
2055064.686	481267.717
2055067.581	481268.423
2055070.394	481267.548
2055072.207	481265.183
2055073.332	481262.401
2055074.085	481259.503
2055074.247	481256.512

Note:
For Station 34+600, construct slope protection parallel to the existing creek channel. Provide a 2.5-meter wide finished creek channel width. The creek channel may be widened to the limits of the adjacent vegetation on the left side. Approximate control for the face of the slope protection is shown in the control table. Final locations may be adjusted by the CO.

UT PFH-39 RECONSTRUCTION
SEVENMILE-GOOSEBERRY ROAD
GOOSEBERRY CREEK
FISHLAKE NATIONAL FOREST
SEVIER COUNTY, UTAH

APPLICANT:
CENTRAL FEDERAL LANDS HIGHWAY DIVISION (FHWA)

DATE PREPARED:
SEPTEMBER 5, 2001

SHEET NO.	TOTAL SHEETS
18-20	18-26

Various ephemeral and intermittent streams - Tributaries to Gates, Gooseberry and Salina Creeks:

Location: See Block 16 for mile locations from the junction of Interstate 70 to the tributary site.

Nature of Activity: The work at these locations include improving the existing substandard roadway to current regulatory standards. There are no major geometric horizontal realignments at this location. The existing 6.1 meter (20 feet) roadway will be widened to 7.8 meters (26 feet). Roadway profile changes at these locations are minor.

Activities to these tributaries involve the replacement of the existing drainage structures, which include various sizes of corrugated metal pipe (CMP), as listed below. The proposed culverts are designed to accommodate a 25-year storm event. Concrete wingwalls will be constructed at culvert pipes greater than 1.2 meters (48-inches) in diameter. Erosion and scour protection consisting of a 3 to 7.5-meter (2 to 25-foot) riprap apron will be constructed at these culverts. All impacts to the existing drainage channels will be restored and re-vegetated.

Location	Nature of Activity
Station 26+909	Install 66-feet (20 m) of 48 inch (1200mm) diameter culvert pipe.
Station 30+037	Install 144-feet (44 m) of 60 inch (1500mm) diameter culvert pipe.
Station 30+797	Install 66-feet (20 m) of 48 inch (1200mm) diameter culvert pipe.
Station 31+936	Install 66-feet (20 m) of 60 inch (1500mm) diameter culvert pipe.
Station 35+064	Install 2- 62-feet (19 m) of 36 inch (900mm) diameter culvert pipe.
Station 42+260	Install 82-feet (25 m) of 60 inch (1500mm) diameter culvert pipe.
Station 43+000	Install 105-feet (32 m) of 48 inch (1200mm) diameter culvert pipe.

The hydrologic characteristics of these tributaries to Gooseberry Creek are listed in the following table. Flows are based on a 25-year storm events.

Location	Drainage Basin Area (English units)	Drainage Basin Area (metric units)	Flow Estimate 25-yr Event (English units)	Flow Estimate 25-yr Event (metric units)
Station 26+909	35.6 ac	14.41 ha	33.0 cfs	0.932 cms
Station 30+037	288.6 ac	116.84 ha	130.0 cfs	3.668 cms
Station 30+797	384.7 ac	155.75 ha	171.0 cfs	4.826 cms
Station 31+936	270.7 ac	109.6 ha	119.0 cfs	3.358 cms
Station 35+064	136.0 ac	56.7 ha	79.0 cfs	2.231 cms
Station 42+260	1585.3 ac	641.8 ha	159.0 cfs	4.492 cms
Station 43+000	26.6 ac	10.8 ha	24.0 cfs	0.667 cms

cms: cubic meters per second, cfs: cubic feet per second, ac: acres, ha: hectares

The following maps indicate the tributary locations and terrain conditions.

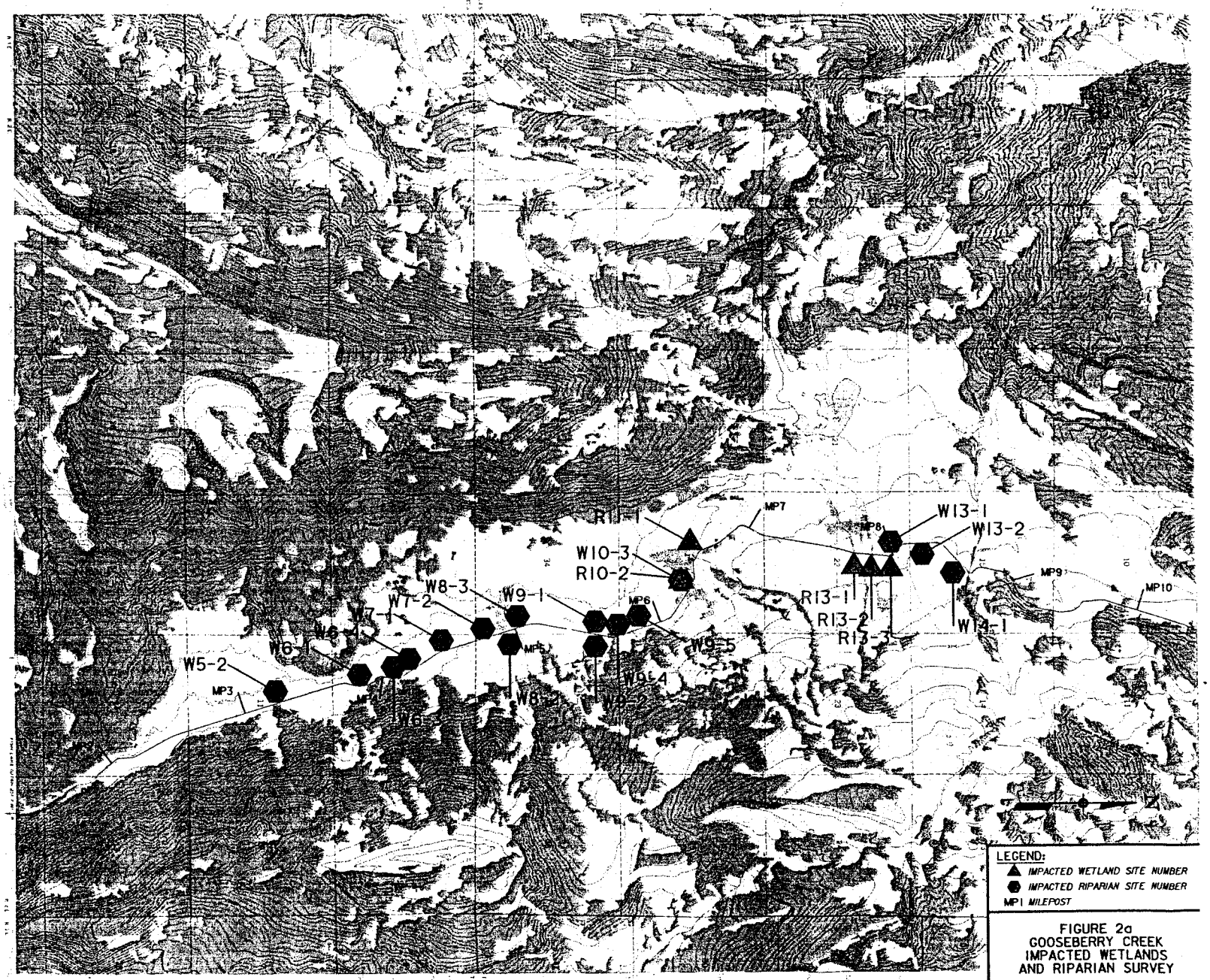
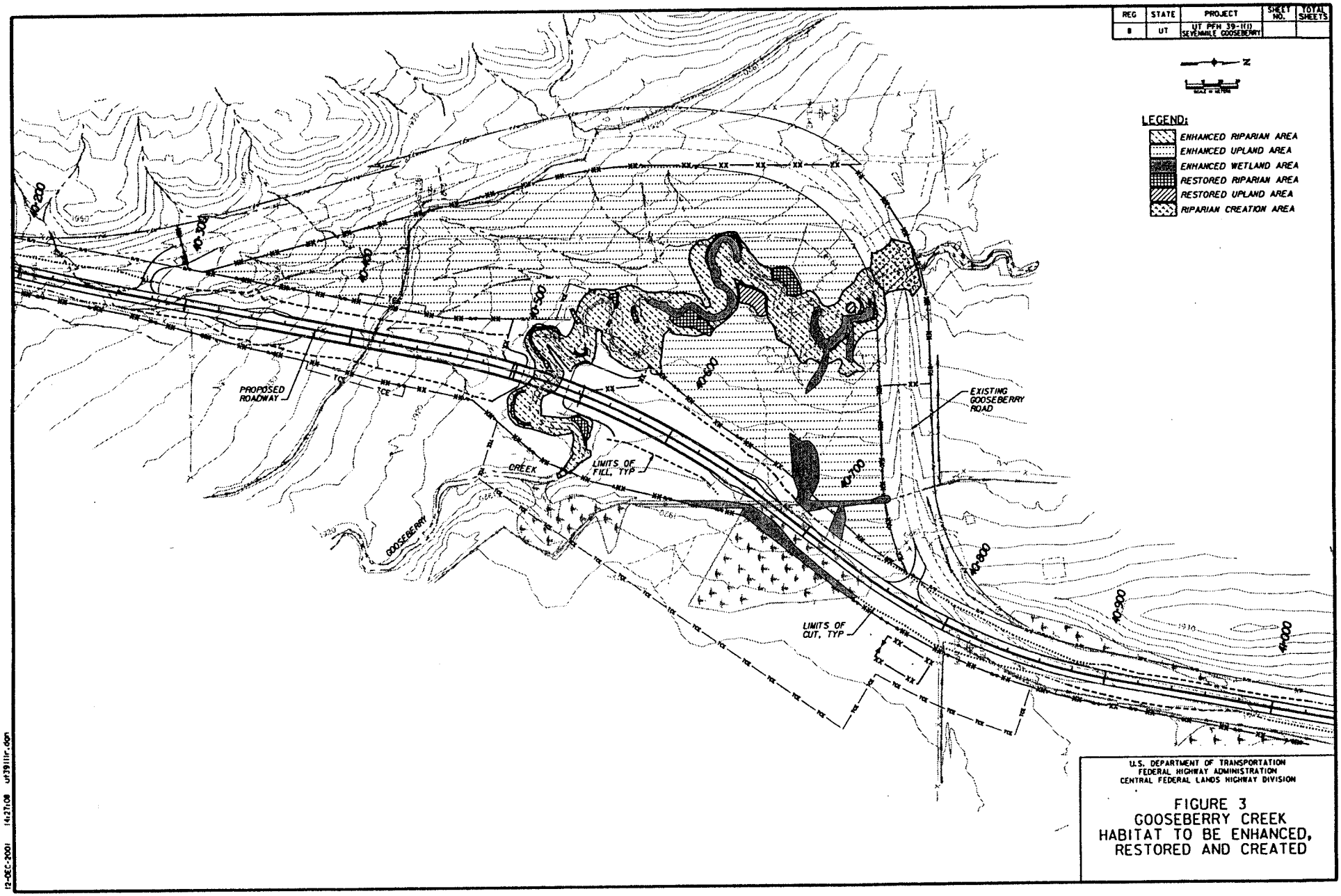


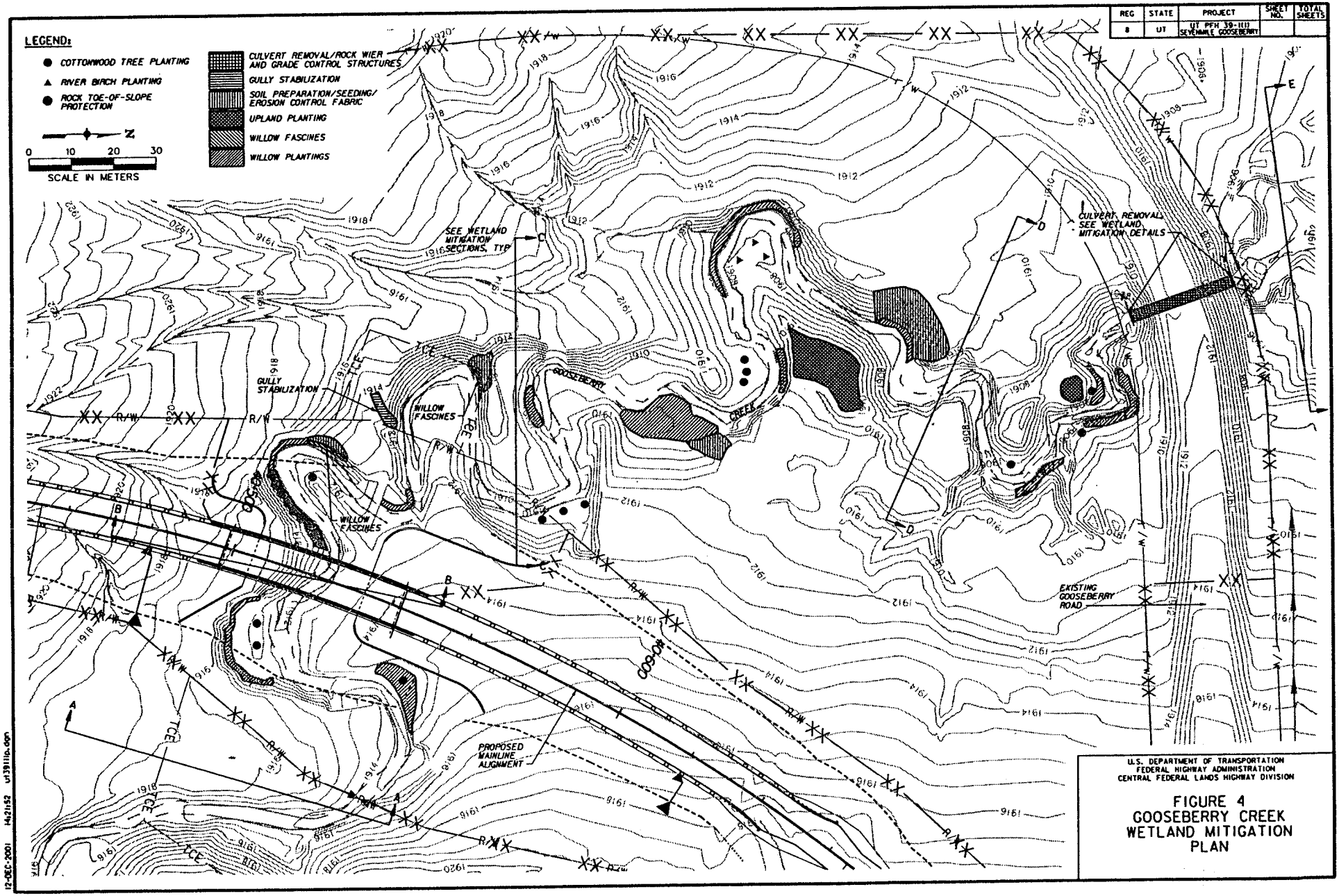
FIGURE 2a
GOOSEBERRY CREEK
IMPACTED WETLANDS
AND RIPARIAN SURVEY
MT. TERRILL U.S.G.S.
QUADRANGLE MAP

Exh. 7-1
199550275

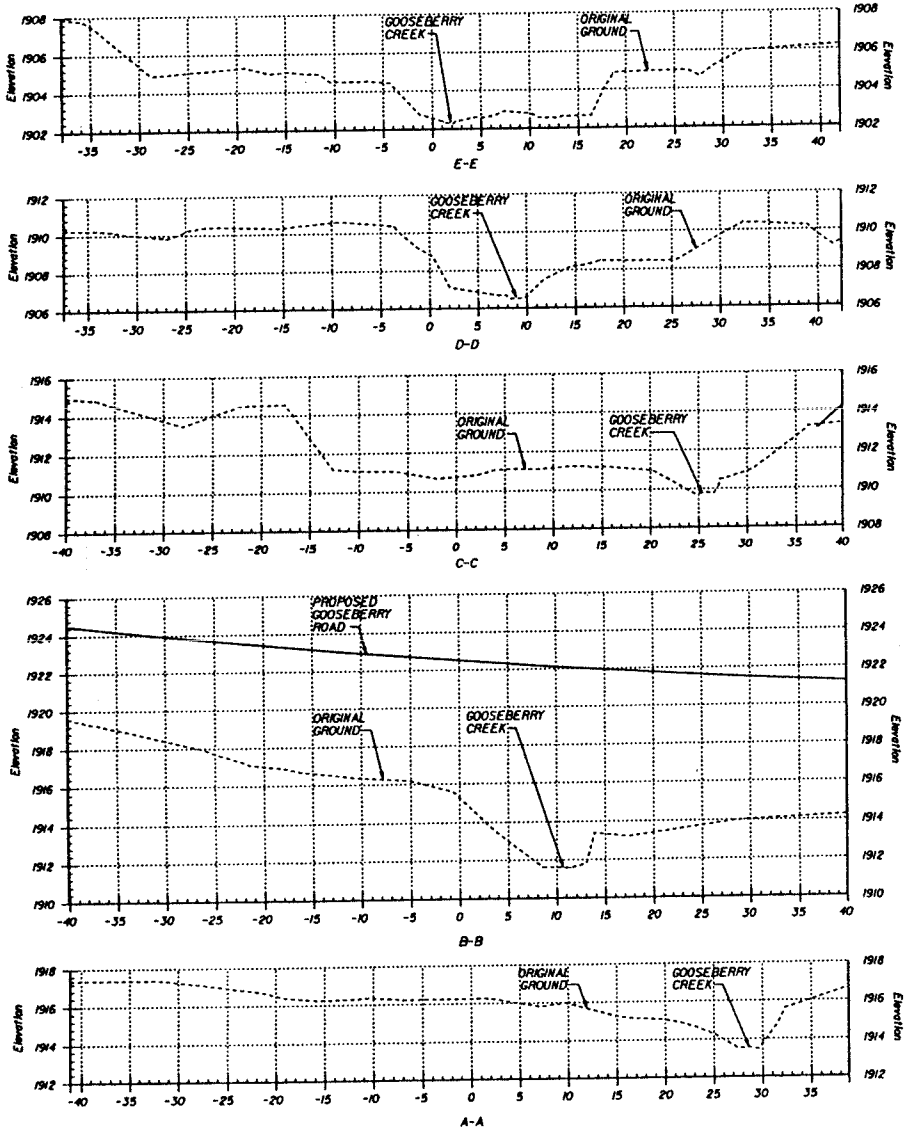


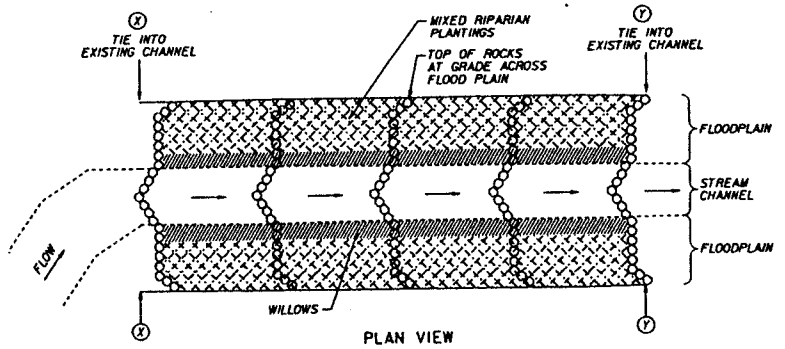
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

FIGURE 3
GOOSEBERRY CREEK
HABITAT TO BE ENHANCED,
RESTORED AND CREATED

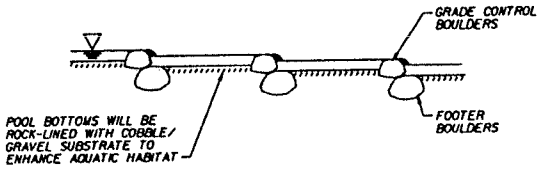

LEGEND:
COTTONWOOD TREE PLANTING
RIVER BIRCH PLANTING
ROCK TOE-OF-SLOPE PROTECTION
CULVERT REMOVAL/ROCK WIER AND GRADE CONTROL STRUCTURES
GULLY STABILIZATION
SOIL PREPARATION/SEEDING/ EROSION CONTROL FABRIC
UPLAND PLANTING
WILLOW FASCINES
WILLOW PLANTINGS
0 10 20 30
SCALE IN METERS
REG 8
STATE UT
PROJECT UT PFH 39-1(1) SEVENMILE GOOSEBERRY
SHEET NO.
TOTAL SHEETS
SEE WETLAND MITIGATION SECTIONS, TYP
CULVERT REMOVAL SEE WETLAND MITIGATION DETAILS
GULLY STABILIZATION
WILLOW FASCINES
GOOSEBERRY CREEK
EXISTING GOOSEBERRY ROAD
PROPOSED MAINLINE ALIGNMENT
R/W
TOE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION
FIGURE 4
GOOSEBERRY CREEK
WETLAND MITIGATION
PLAN
12-DEC-2001 14:21:52 u:\39111a.dgn

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
8	UT	UT PFH 39-1(1) SEVENMILE GOOSEBERRY		

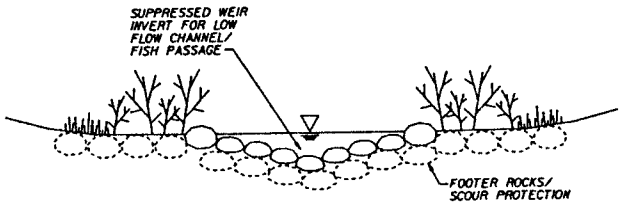




PLAN VIEW



PROFILE VIEW



SECTION

STEP POOL SYSTEM AT CULVERT REMOVAL

Not To Scale

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

FIGURE 5
GOOSEBERRY CREEK WETLAND MITIGATION SECTIONS AND DETAILS

12-DEC-2001 14:24:17 uf39111a.dgn

Best Management Practices (BMPs)
for Erosion and Sediment Control

BMPs for erosion and sediment control are used as both temporary measures during construction and permanent measures for long-term pollution prevention. The 1987 amendments to the Clean Water Act (CWA) required the Environmental Protection Agency (EPA) to establish the National Pollutant Discharge Elimination System (NPDES) for point discharges of storm water. This led to the development of permits which require site-specific storm water pollution prevention plans. These permits address installation and maintenance of storm water management prior to final stabilization of the construction site. Section 401 of the CWA requires that a State water quality certification be obtained for any project that results in a discharge into navigable waters, and Section 404 requires a permit from the Corps of Engineers for the discharge of any fill material into navigable waters.

Federal Lands Highway projects are constructed using guidelines included in the *Standard Specifications For Construction of Roads and Bridges on Federal Highway Projects (FP)*, which contain BMP's that are employed on the Central Federal Lands Highway Division's forest highway projects. Contract requirements for all FHWA projects are contained in the FP. For each individual project, the FP is normally supplemented with a set of Special Contract Requirements (SCRs) which either modify an FP requirement or add a new requirement. These are discussed after the FP requirements. Following are excerpts from the FP which relate to erosion, sediment, and water quality. Note that the FP speaks directly to the contractor.

> Do not operate mechanized equipment or discharge or otherwise place any material within the wetted perimeter of any waters of the U.S. within the scope of the Clean Water Act (33 USC § 1251 et seq.). This includes wetlands, unless authorized by a permit issued by the U.S. Army Corps of Engineers according to 33 USC § 1344 and, if required, by any state agency having jurisdiction over the discharge of materials into waters of the U.S. In the event of an unauthorized discharge:
>
> (a) Immediately prevent further contamination
> (b) Immediately notify the proper authorities
> (c) Mitigate damages as required
>
> Separate work areas, including material sources, by the use of a dike or other suitable barrier that prevents sediment, petroleum products, chemicals, or other liquid or solid material from entering the waters of the U.S. Use care in constructing and removing the barriers to avoid any discharge of material into, or the siltation of, the water. Remove and properly dispose of the sediment or other material collected by the barrier.

For soil erosion control, among other requirements, the FP directs the contractor to:

> Limit the combined grubbing and grading operations area to 30,000 square meters of exposed soil at one time.

Exhibit 8
199550275

Unless a specific seeding season is identified in the contract, apply permanent turf establishment to the finished slopes and ditches within 30 days.
Apply temporary turf establishment or other approved measures on disturbed areas that will remain exposed for over 30 days.

Construct and maintain erosion controls on and around soil stockpiles to prevent soil loss.

Following each day's grading operations, shape earthwork to minimize and control erosion from storm runoff.

Inspect all erosion control facilities at least every 7 days, within 24 hours after more than 10 millimeters of rain in a 24-hour period, and as required by the contract permits.

Maintain temporary erosion control measures in working condition until the project is complete or the measures are no longer needed. Clean erosion control measures when half full of sediment.

The FP also includes specifications for topsoil, fertilizer, mulches, seed and other plant materials, erosion control mats, tackifiers, sod, straw bales, silt fence, geotextiles, etc.

To comply with NPDES permit requirements, an erosion control plan is required for each project. It may be developed by the FHWA or required of the contractor by the SCRs. This plan is used as the basis for protecting the project from erosion during construction. The contractor is required to incorporate all permanent erosion control features into the project at the earliest practicable time. No work can be started until the necessary controls are installed.

For projects with water quality issues, the SCRs state that the contractor is required to designate an individual, other than the project superintendent, whose primary responsibility is to serve as the water quality supervisor for the duration of the project. The water quality supervisor's responsibilities include directing the implementation of effective erosion/sediment control measures to control construction site drainage and water quality; directing the construction, operation, and dismantling of temporary erosion control features; and being available to modify site drainage and implement storm and winter shutdown procedures. Winter shutdown procedures are included in the erosion control plan.

For projects with water quality issues, the SCRs state that if a contractor's truck or other vehicle should accidentally dump pollutants that could pollute any water body along the project, emergency action shall be taken to prevent contamination of the water body. The SCR specifies that the carrier of the spilled material is responsible for cleanup of spilled material, and includes reporting procedures for accidental spillage. The appropriate agencies are immediately informed of any such event. No in-stream fueling of any vehicle is permitted. In-stream activity is limited to that necessary to place structures and for wetland replacement measures. The SCRs specify that, if the contractor should locate an oil storage facility that exceeds a certain capacity (as specified in Environmental Protection Agency (EPA) regulations) and where the occurrence of spills could contaminate water bodies along the proposal, the contractor would have to comply

with those EPA regulations in the preparation and implementation of a Spill Prevention Control and Countermeasure Plan.
The following statement is included in the SCRs whenever a project may affect a live stream:

> The construction project engineer will be responsible for monitoring turbidity during the construction of this project to assure compliance with state water quality standards. The turbidity will be measured using an HF-DRT 15 turbidimeter or equivalent. Measurements will be taken upstream from the project area (as a control) and 150 m (500 feet) downstream in the area of highest turbidity whenever noticeable turbidity is being generated from the project. If these measurements show an increase of 10 Nephelometric Turbidity Units or more, the Engineer shall suspend construction operations in the vicinity of the problem area and modify the erosion control plan to eliminate the cause of high turbidity.

The SCRs contain seeding requirements for slopes, and this is normally supplemented with detail drawings and quantities in the project plans.